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Written Opinion of the Int Appl No. PCT/EP2004/001234
Int. Searching Authority

Box No. II Priority

1. x The following document has not yet been furnished:
x copy of the earlier application whose priority
has been claimed
(Rules 43bis.1 and 66.7 (a))

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to
novelty, inventive step or industrial applicability; citations
and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 5-7, 9, 11, 12 No: Claims 1-4, 8, 10, 13, 14
Inventive Step (IS)	Yes: Claims No: Claims 1-14
Industrial Applicability (IA)	Yes: Claims 1-14 No: Claims

2. Citations and explanations:
see appended sheet

**Box No. VII Certain defects in the international
Application**
see appended sheet

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**Box No. VIII Certain observations in the international
Application**

The following observations on the clarity of the claims,
description and drawings or on the question whether the claims
are fully supported by the description are made:

see appended sheet

**V. Substantiated Determination under Rule 43bis1(a)(i),
regarding Novelty, Inventive Activity, and Industrial
Applicability; Documents and Explanations in Support of this
Determination**

1. This action names the following documents (D1/D2/D3) cited in the Search Report, the named document D1 being regarded as being the most proximate related art. The numbering will be retained in the further course of the proceedings as well:

D1: US-A-5 345 582 (TSUCHIYA KENICHI)

D2: WO-A-92/19046 (MOTOROLA GMBH)

D3: US-A-4 084 236 (CHELBERG LAWRENCE W ET AL)

2. Lack of novelty, Artikel 33(2) PCT:

The present international Application does not satisfy the requirements of Article 33(2) PCT because the subject matter of current independent Claims 1, 13 and 14 are not novel with respect to the subject matter of document D1. The reasons for this judgment are shown in the following paragraphs.

2.1. Using the general structure of independent Claim1 and using reference symbols as defined in document D1, the teaching of D1 describes (see D1, column 1, lines 7-10, column 2, lines 35-63, column 4, line 10-column 5, line 11, page 5, lines 43-51; Figures 2a, 2b):

A method for error detection in a cache memory (10) for storing data, made up of processor instructions [see especially D1, column 1, lines 7-10], the access to the data stored in the cache memory (10) taking place by addresses assigned to them, [see especially D1, column 2, lines 35-44]; and to the data to be stored in the cache memory (10), in each case one first test signature, made up of a plurality of signature bits, being generated on the basis of the addresses assigned to the data to be stored, and being also stored in the cache memory [see especially D1, column 2, lines 43-54]; and at each read access to the cache memory, a second test signature being formed based on the address applied at the cache memory, and being compared to the first test signature read out with the data from the cache memory, in order to detect an addressing error (see especially D1, column 2, lines 54-60], and when there is no agreement, an error signal being generated [see especially D1, column 5, lines 43-51].

From the above-cited subject matter of document D1, it emerges clearly that the method shown in document D1 has every one of the features specified in current independent Claim 1. Consequently, the subject matter of current Claim 1

is not to be regarded as novel, according to the requirements of Article 33(2) PCT.

2.2. In current independent Claim 13, a device is specified for error detection in a cache memory, that corresponds to the method described in current independent Claim 1. For the same reasons given for current Claim 1 in paragraph 2.1, it follows that the subject matter of independent Claims 13 is also not to be regarded as being novel, according to the requirements of Article 33(2) PCT.

2.3. In current independent Claim 14 a cache memory is specified, which includes an error detection device according to independent Claim 13. Therefore, it follows that the subject matter of independent Claims 14 is not to be regarded as being novel, according to the requirements of Article 33(2) PCT, for the same reasons given for current Claim 13 in paragraph 2.2..

2.4. Furthermore, the subject matters of current dependent Claims 2, 3, 4, 6 and 10 also do not satisfy the requirements of 33(2) PCT with respect to novelty, since the features specified in the named dependent claims have all been described by the teaching of D1 (see abstract of the teaching of D1 in paragraph 2.1, above).

3. Lacking inventive step (Article 33(3) PCT) :

Current dependent Claims 5-7, 9, 11 and 12, for reasons given below, do not satisfy the requirements of Article 33(3) with respect to inventive step:

In the subject matter of current dependent Claims 5-7, 9, 11 and 12, which all refer exclusively to details with respect to the design of the present invention that is specified in current independent Claims 1, 13 and 14, no inventive step may be recognized, since the features shown in the named dependent claims, provided that they have not been made obvious by a simple and direct combination of the teaching of D1 with one of the two documents D2 (with respect to current Claims 5, 6 and 7) or D3 (with respect to current Claims 11 and 12), should rather be regarded as a mere choice, obvious to one skilled in the art, between obvious possibilities, which is not connected with any unforeseeable effect.

Consequently, the subject matter of dependent Claims 5-7, 9, 11 and 12 does not satisfy the requirements of Article 33(3) PCT.

VII Certain Lacks of the International Application:

1. In order to fulfill the requirements of Rule 5.1(a) (iii) PCT, in the specification of the International Application, documents D2 and D2 [sic;D3] should have been mentioned, and the relevant related art described therein should have been briefly outlined.

2. Independent Claims 1, 13 and 14 are not drawn up in the two-part form according to Rule 6.3(b) PCT. However, since in the present case the division into two parts seems expedient, the independent claims of the International Application should have been drawn up in the two-part form in order to satisfy the requirements of Rule 6.3(b) PCT.

3. Upon reworking the Application, especially the introductory part including the representation of the object or the advantages of the present invention, care should be taken that no fact of the case is added that goes beyond the content of the Application in the version as originally filed, Article 19(2) and 34(2) (b) PCT.

VIII Certain Comments on the International Application:

1. An objection is raised because of lacking clarity, since from independent Claims 1, 13 and 14 it cannot be clearly inferred that the test signature is generated from the addresses assigned to the data, which, according to the description of the present invention in the specification, is clearly the case.

Accordingly, independent Claims 1, 13 and 14 have to be changed in such a way that this clearly may be seen from the independent claims, Article 6 PCT.